SOME ABERRANT PYROLA COLLECTIONS FROM EASTERN NORTH AMERICA

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The occurrence of aberrant specimens in the genus *Pyrola* is nothing new. Indeed, abnormalities of various kinds can usually be found in any species if a sufficient number of specimens are examined. In several instances, however, the aberrant nature of the *Pyrola* specimens was not recognized, and the plants were subsequently described as new species.

Pyrola compacta, collected by Otto E. and Grace K. Jennings in 1912 and described by him (1920) as a new species, is a clone of such aberrant specimens. In all their basic features, the type specimens (fig. 1) represent abnormal plants of *P. elliptica* Nutt. growing in a somewhat unusual habitat, namely, in a wet, open pasture. The latter species is more characteristically found in somewhat dry to dampish situations in mixed hardwoods. The features which indicate most clearly the similarity of the type specimens with *P. elliptica* are the elliptic, oval to obovate leaves and the short triangular-lanceolate sepals with acuminate apices and overlapping bases. Although the sepals are five in number, it is the abnormally large number of petals which give the inflorescences their dense, "compact" appearance. This is due to the fact that some of the stamens in each flower have become completely petaloid, thereby increasing the petal number from 5 to 8 or possibly more.

In some instances, the stamens, although quite petaloid, have partly developed anther sacs projecting from the surface. The anthers of the remaining stamens which appear to be nearly normal have very conspicuous, generally fimbriate mucros which in some cases tend to be slightly petaloid as well. The shape of the anther tubes are also like those found in *P. elliptica*. Jennings noted in his description of the type specimens that they resembled *P. elliptica* very closely. Based on the dried specimens, he concluded

Fig. 1. Type specimens of *Pyrola compacta* illustrating the general habit and leaf shape of *P. elliptica* (A) and the abnormal flowers with extra petals and conspicuously mucronate anthers (B).

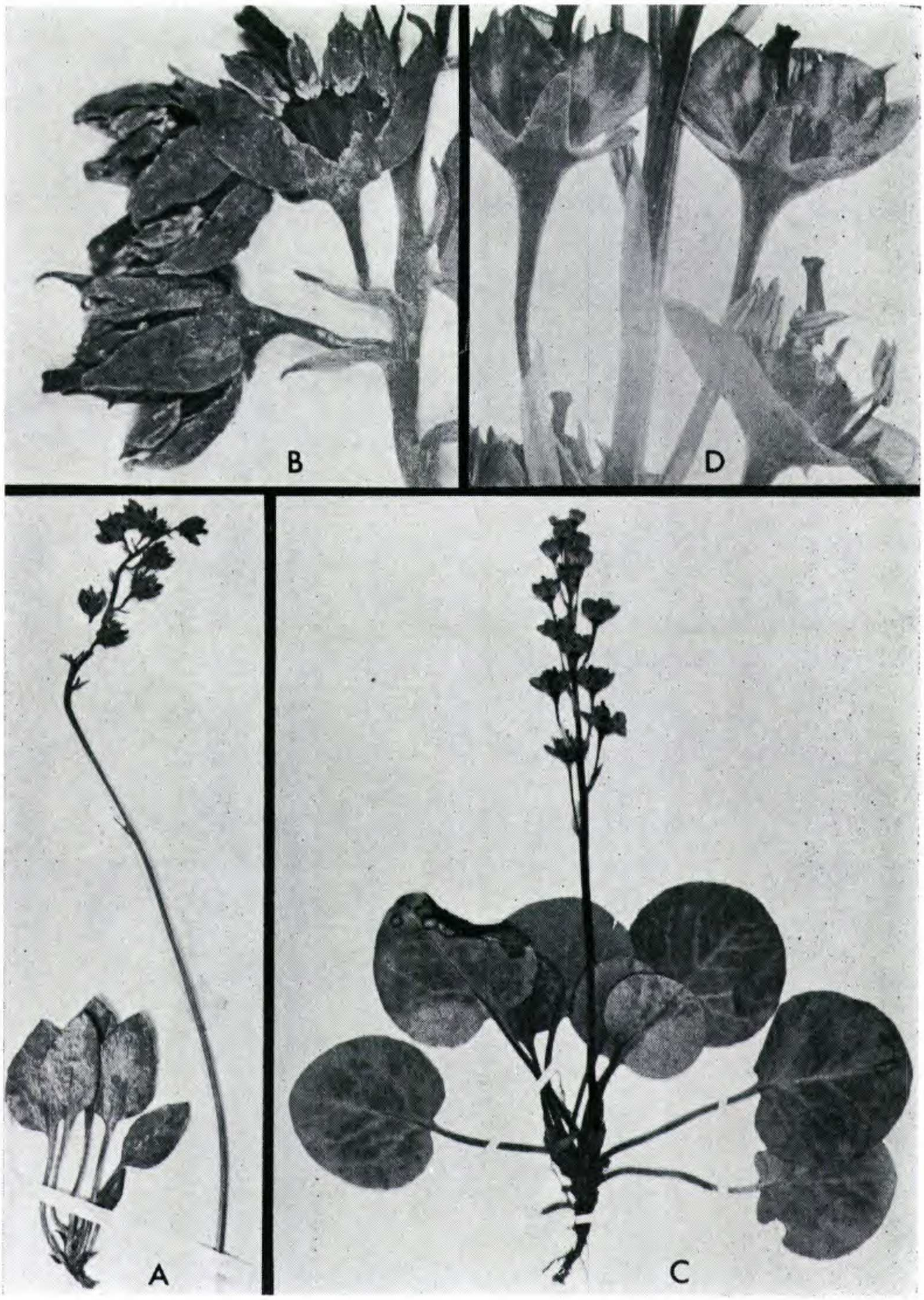

Fig. 2. Type specimen of *Pyrola oxypetala* (A & B) and an abnormal specimen of *P. asarifolia* var. *asarifolia* (C & D). The two mutant specimens are similar in their erect flowers and extrose stamens.

that the flower color must have been purplish or rose. It is more likely that the flowers were white as in typical *P. elliptica* since all of the specimens on the sheet are scorched to a deep brown color. The appearance of these petals is much like those on similar sheets of *P. elliptica*. Jennings also reported that the type specimens were very fragrant; a similar observation has also been made for *P. elliptica* by Lakela (1965). *P. compacta* appears to have been overlooked in the literature, for no mention of the name has been found applied either to a distinct species or in synonymy with *P. elliptica*.

Pyrola oxypetala Austin, maintained as a distinct species in the eighth edition of Gray's Manual, is more appropriately placed in synonymy with *P. virens* Schweigg as has been done by Gleason (1963). The type specimen (fig. 2, A & B) collected near Deposit, N.Y. exhibits the ovate leaves of *P. virens*, although somewhat more lanceolate than normal, as well as the short, merely acute, triangular-ovate sepal lobes which do not overlap at the bases. The flowers are abnormal in that they are held erect and that the petals taper either gradually or quite abruptly to a sharp point; as well, the stamens are extrose with the tubes facing the base of the ovary rather than being inverted (with the tubes pointing away from the ovary) as in normal *Pyrola* flowers during anthesis. The stamens in *Pyrola* buds are always extrose but become introse by the time the flowers are fully opened. The short, barely exserted, straight style of *P. oxypetala* with the stigmatic lobes not yet visible at the tip also appears as in many young *Pyrola* flowers.

The erect flowers, extrose stamens, and short, straight style are not features unique to this plant alone. One specimen of *P. asarifolia* from the Thunder Bay District of Ontario (LKHD 9257; fig. 2, C & D), typical in all key features such as the ovate-cordate leaves, the shape and length of the sepals, and the pink flowers, exhibits these same features. The inflorescence with its flowers borne on long, erect pedicels has the appearance of an ornate candelabrum. Although the flowers were apparently almost

fully open when the plant was collected, the stamens are still completely extrose and the short style barely exserted.

The morphological changes brought on by mutations are not always quite so conspicuous; mutations producing minor changes are more frequently found. One collection of *P. asarifolia* (CAN 86307) was found in which the sepals in each flower were fused into two groups — one with 3 sepals, the other with 2. Variations in the numbers of floral parts may sometimes be found as in *P. asarifolia* (CAN 237255) in which one flower on the plant had its sepals, petals, carpels, and stigmas in 6's and as well had 12 stamens. Somewhat similar variations in the number of floral parts have also been observed in specimens of *P. minor* and *P. grandiflora*.

Without a doubt mutations play their role in the process of speciation through the introduction of additional variation. However, such gross alterations of the basic floral structures of individual plants or clones from the population norm as seen in *P. compacta* and *P. oxypetala* must surely offer little adaptive advantage to the plants. The monstrous origin of such aberrations should be noted, but such individuals deserve no specific recognition.

Specimens Cited

Pyrola compacta Jennings (Type): Wet, open pasture near Sixmile Lake (Louise Lake), Thunder Cape, northwestern Ontario, Aug. 20, 1912, *Otto E. & Grace K. Jennings* (CM). *Pyrola oxypetala* Austin (Type): Wooded hill near Deposit, Delaware Co., N.Y., June 1, 1860, *C. F. Austin* (GH). *Pyrola asarifolia* Michx. var. *asarifolia*: Rocky woods along lakeshore, north shore of Little Pigeon Bay, Crooks Tp., Thunder Bay District, Ontario, July 8, 1952, *C. E. Garton* 1785 (LKHD 9257). *Pyrola asarifolia* Michx. var. *purpurea* (Bunge) Fern.: Near Mud Lake, Oliver Tp., Thunder Bay District, Ontario, June 30, 1937, *C. E. Garton* 511 (CAN 86307); Larch bog, vicinity of Knob Lake, north of John Lake, Quebec, 54°48′ N., 66°49′ W., July 11, 1955, *L. A. Viereck* 618 (CAN 237255).

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